

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
22 January 2004 (22.01.2004)

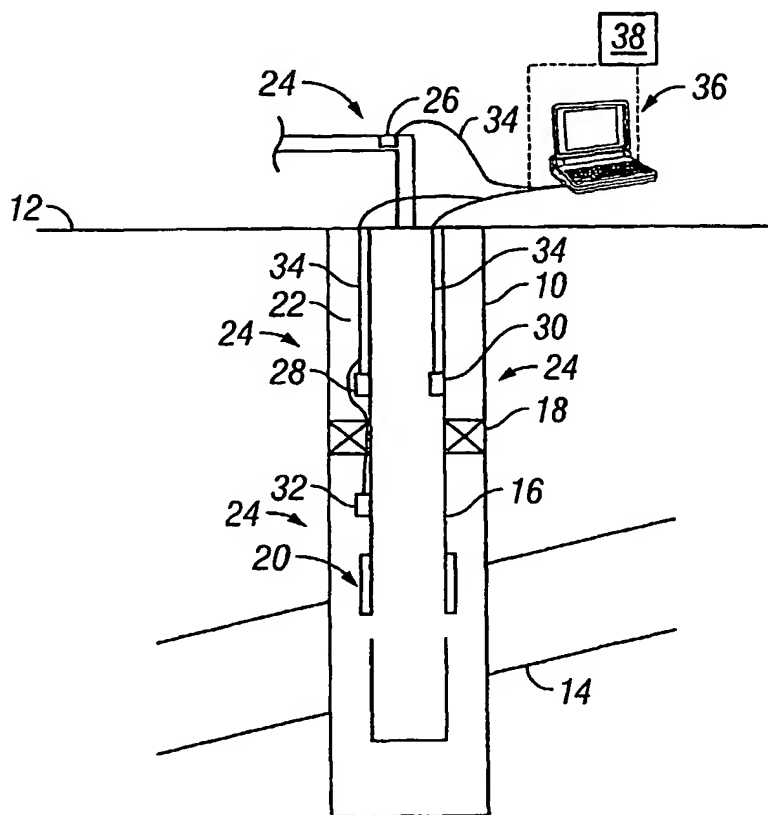
PCT

(10) International Publication Number  
**WO 2004/007909 A3**

- (51) International Patent Classification<sup>7</sup>: **E21B 47/00**
- (21) International Application Number:  
PCT/GB2003/002945
- (22) International Filing Date: 8 July 2003 (08.07.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:  
0216647.8 17 July 2002 (17.07.2002) GB
- (71) Applicant (for BR only): **SCHLUMBERGER SURENCO SA** [—/—]; 8 Calle Aquilino de la Guardia, Panama City (PA).
- (71) Applicant (for SD, TR only): **SCHLUMBERGER OIL-FIELD ASSISTANCE LIMITED** [—/—]; Craigmuir Chambers, Road Town, Tortola (VG).
- (71) Applicant (for CN only): **SCHLUMBERGER OVERSEAS S.A.** [—/—]; 8 Calle Aquilino de la Guardia, Panama City (PA).
- (71) Applicant (for CG, CM, CZ, DZ, EC, GA, IN, LT, MA, NE, TD, VN only): **PRAD RESEARCH AND DEVELOPMENT N.V.** [NL/NL]; De Ruyterkade 62, Willemstad, Curacao (AN).
- (71) Applicant (for GB, JP, NL only): **SCHLUMBERGER HOLDINGS LIMITED** [—/—]; P.O. Box 71, Craigmuir Chambers, Road Town, Tortola (VG).
- (71) Applicant (for TT only): **SCHLUMBERGER SERVICES LIMITED** [—/—]; P.O. Box 438, Tortola (VG).
- (71) Applicant (for all designated States except BR, CA, CG, CM, CN, CZ, DZ, EC, FR, GA, GB, IN, JP, LT, MA, NE, NL, SD, TD, TR, TT, US, VN): **SCHLUMBERGER TECHNOLOGY LIMITED B.V.** [NL/NL]; Parkstraat 83-89, NL-2514 JG The Hague (NL).

[Continued on next page]

(54) Title: SYSTEM AND METHOD FOR OBTAINING AND ANALYZING WELL DATA



(57) Abstract: A system and method including a sensors (28, 32) deployed in a wellbore (10), the sensors measuring various downhole parameters. The system retrieves the relevant data from the sensors, validates the data, conditions the data, and analyzes the data to diagnose the wellbore and the reservoir (14) to indicate trends therein. The system has the capability of enabling the characterization of the wellbore and reservoir by being linked to well test analysis tools. The system also has a screening analysis that is much less time consuming than well test analysis tools and that indicates to a user which wellbore and/or reservoirs should be subjected to the more robust and time consuming well test analysis tool.



(71) Applicant (*for FR only*): **SERVICES PETROLIERS SCHLUMBERGER** [FR/FR]; 42 rue Saint Dominique, F-75007 Paris (FR).

(71) Applicant (*for CA only*): **SCHLUMBERGER CANADA LIMITD** [CA/CA]; 525 - 3rd Avenue S.W., Calgary, Alberta T2P 0G4 (CA).

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): **GAJRAJ, Allyson** [TT/GB]; 22 Thorncroft, Saffron Walden, Essex, CB10 2AZ (GB). **KOSMALA, Alexandre, G.E.** [US/GB]; Aca-cia Farm, Lower Road - Croydon, Royston SG8 0EE (GB). **KIMMINAU, Stephen** [GB/GB]; 14 Cedar Chase, Rectory Road, Taplow, Maidenhead SL6 0EU (GB). **WALSH, Peter, William** [AU/RU]; Unit 1806, Rosinka, Village Angelovo, Kransnogorsky District, Moscow Region (RU).

(74) Agent: **STOOLE, Brian, David**; Gamma House, Enterprise Road, Chilworth Science Park, Southampton, SO16 7NS (GB).

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,

LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Published:**

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the international search report:  
25 March 2004

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

# INTERNATIONAL SEARCH REPORT

International Patent No.  
PCT/GB 03/02945

**A. CLASSIFICATION OF SUBJECT MATTER**  
IPC 7 E21B47/00

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)  
IPC 7 E21B G02B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 703 286 A (CHEN CHIH C ET AL) 30 December 1997 (1997-12-30) column 1, line 37 -column 2, line 35 column 3, line 43 -column 4, line 25 column 5, line 65 -column 6, line 29	1-37, 45-57
A	US 2002/009252 A1 (DAIGLE GUY A ET AL) 24 January 2002 (2002-01-24) the whole document	1
A	US 5 315 110 A (SMITH J DOUGLAS) 24 May 1994 (1994-05-24) the whole document	1



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

**\* Special categories of cited documents :**

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
- \*E\* earlier document but published on or after the international filing date
- \*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- \*O\* document referring to an oral disclosure, use, exhibition or other means
- \*P\* document published prior to the international filing date but later than the priority date claimed

- \*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- \*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- \*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- \*G\* document member of the same patent family

Date of the actual completion of the international search

20 January 2004

Date of mailing of the international search report

30/01/2004

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax: (+31-70) 340-3016

Authorized officer

Ott, S

## INTERNATIONAL SEARCH REPORT

 International Application No  
 PCT/GB 03/02945

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5703286	A	30-12-1997	NONE
US 2002009252	A1	24-01-2002	US 6317555 B1 13-11-2001 WO 02097388 A1 05-12-2002 US 2003003473 A1 02-01-2003 AU 759390 B2 10-04-2003 AU 4183499 A 23-11-1999 CA 2331739 A1 11-11-1999 CN 1308732 T 15-08-2001 EP 1078289 A1 28-02-2001 JP 2002513949 T 14-05-2002 NO 20005530 A 22-12-2000 WO 9957589 A1 11-11-1999 US 2002009279 A1 24-01-2002
US 5315110	A	24-05-1994	NONE